

We claim:

1. A method of user policy management in a communication system, comprising:
receiving user-entered policies in a user-understandable representation capable
of translation into a formal executable language;
5 translating said policies from said user-understandable representation into an
executable feature language capable of execution by said communication system;
translating said policies from said executable feature language into a policy
language and detecting common feature interaction errors between said policies;
analyzing said feature specification errors to identify errors that are common to
10 naïve users;
reporting said errors that are common to the user in said user-understandable
representation;
providing the user with a recommendation for correction of said feature
interaction errors and re-integration of said policies in said executable feature
15 language; and.
uploading said policies for execution by said communication system.
2. The method of claim 1, wherein said user-understandable representation is a
Web browser interface.
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3. The method of claim 1, wherein said executable feature language is Call
Processing Language (CPL).
4. The method of claim 1, wherein said policy language is Feature Interaction
25 Analysis Tool (FIAT).
5. The method of claim 1, wherein said step of receiving user-entered policies in
said user-understandable representation further comprises receiving user-entered
operations on said policies, including:
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Create: for creating and activating a new policy;
Modify: for modifying a selected policy;

Delete: for deleting a selected policy;

Duplicate: for making a copy of a selected policy;

Deactivate: for deactivating a selected policy;

Activate: for activating a selected inactive policy;

- 5 *Set Priority*: for setting priority of a selected policy to one of either an absolute priority or a relative priority;

Validate: for detecting and reporting conflicts among active ones of said policies;

Approve: for approving and enabling selected policies for execution.

- 10 6. The method of claim 1, wherein each said policy includes:

a *name* for use as a unique identifier;

a *priority*, expressed as a numerical value;

an *operation*, for application to a call within said communication system;

a *precondition*, based on characteristics of a caller or callee, whereby said policy is

- 15 *general* in the event that the precondition is a domain of values, and is *specialized* in the event that the precondition relates to particular values;

a *target*, for said *operation*;

an optional list of *exceptions* to said precondition in the event that that said policy is *general*; and

- 20 a *time constraint*, during which the policy is active.

7. The method of claim 6, wherein individual ones of said policies are translated into said executable feature language as scripts representing individual branches of a decision tree, with explicit priorities allocated among said branches.

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8. The method of claim 7, wherein said priorities are allocated by numerically naming the individual branches.

9. The method of claim 8, wherein said step of translating said policies from said
30 executable feature language into said policy language further comprises visiting

successive ones of said branches downwardly and producing corresponding rules, using the following mapping:

Policy	Rule
Name	Rule name
Priority	Rule number
Operation	Rule result
Precondition	Rule triggering event
Target	Rule result
Exceptions	Rule constraint
Time constraints	Rule precondition

5 10. The method of clam 9, wherein said step of analyzing said feature specification errors to identify errors that are common to naïve users further includes determining whether each said policy is *general* or *specialized* and then comparing relative priorities of said policies.

10 11. The method of claim 10, wherein said step of reporting said errors further includes identifying a category of incoherence, assigning a role of each policy in the occurrences of said errors, and providing an example of possible misbehaviour resulting from said interaction.

15 12. The method of claim 11, wherein said errors that are common to naïve users and are reported in said reporting step include:

Redundancy: whereby two general policies are active;

Shadowing: whereby a general policy overrides a specific policy such that the specific

20 policy can never be triggered;

Specialization: whereby a specific policy is selected over a general policy of lower priority; and

Conflict: whereby two policies have overlapping preconditions but with different resulting actions.

13. The method of claim 12, wherein said *Redundancy* error includes a *Conflict with Redundancy* error whereby a general policy and an exception for the other general policy lead to different resulting actions.

5 14. The method of claim 13, wherein said step of providing the user with a recommendation for correction of said feature interaction errors includes the following suggestions:

- edit a policy;
- disable a policy;
- 10 set the priority of a first policy above or below the priority of a second policy;
- add an exception to a general rule;
- tolerate the interaction and no longer report it.